

Name : **Dr. Aruru Sai Kumar**
 Designation : Assistant Professor
 Department : Electronics & Communication Engineering
 Mail I'd : saikumar_a@vnrvjiet.in/asaikumar.nitw@gmail.com
 Experience (in years): **12.5**



Teaching: **8.5 Years** Research: **4 Years** Others(if any, specify): Nil

1. Educational / Technical qualifications:

S.No	Level (UG / PG / Ph.D)	University	Year of passing	Specialization
1	Ph.D	NIT Warangal	March 2022	VLSI Design
2	M.Tech	VIT University Vellore	2010	VLSI Design
3	B.Tech	JNTU Hyderabad	2008	ECE
4	Intermediate	BIE	2004	MPC
5	SSC	BSE	2002	----

2. Teaching and Learning:

2.1. Teaching Interests:

Switching Theory and Logic Design, VLSI Design, Digital Design Through Verilog HDL, Low Power VLSI Design, CPLD & FPGA Architectures & Applications, MPMC, Signals and Systems, Control Systems, Embedded Systems.

2.2. Novel Teaching & Learning Techniques adopted: POGIL, WIT & WIL and Learning by Doing.

2.3. Involvement in curriculum updating / Design:

3. Co-curricular and Extra-Curricular Activities

3.1. Interests and Hobbies: Listening Music and Playing cricket

3.2. CCA/ECA Organized:

3.3. CCA/ECA participated:

3.4. Counseling and Mentoring Activity: Yes

3.5. Committees involved in:

Department level: Faculty Publication Incharge, PRC Member(SIG-VLSI)

Institute Level:

4. Conference / Workshop / Seminar / Guest Lectures :

4.1 Conducted: Nil

4.2 Attended: 14

- A three day work shop on MATLAB conducted by iMatrix Technologies in Regency Institute of Technology during 9th -11th August 2010.
- Faculty Development Program on "Exploring for Excellence in Education" at MLRITM on 26th Nov. 2015 and the speaker is Prof. M L Sai Kumar.
- Faculty Development Program on "VLSI System Design" at MLRITM on 28th Nov 2015 and the speaker is Dr. Rahul Shreshta (Asst. Prof. IIIT Hyderabad).
- One day FDP for MLRITM faculty on "Technical Paper Writing Using LaTeX" by Dr. Srinivas Nallagonda on 17th March 2017.
- One week workshop on "Internet of Things (IoT)" by Dr. B. Lakshmi, during 08th -13th May, 2017 in NIT Warangal (TEQIP).

- One week Faculty development programme on “Fundamentals of Signals, systems and random variables with hands-on session using MATLAB”, during 5th June to 10th June 2017 in Geethanjali College of Engineering and Technology.
- One week Faculty development programme on "Advanced CMOS VLSI" from 3rd to 8th December 2018 organized by E&ICT academy, NIT Warangal.
- One week Faculty development programme on "Nanoscale Devices and Circuits" from 17th to 22nd June 2019 organized by E&ICT academy, NIT Warangal.
- One week Faculty development programme on "Biomedical Signal Processing" from 11th to 16th December 2019 organized by E&ICT academy, NIT Warangal.
- A 5-day short term training program (STTP) on “Electronics Systems: Devices, IC and Applications” organized by Department of Electronics and Communication Engineering, NIT Arunachal Pradesh from 14th–18th March 2022 in online mode, sponsored by AICTE.
- Eight day FDP on “Introduction to Low Power VLSI Design and Applications” from 23rd December to 03rd January 2022 organized by E&ICT academy, NIT Warangal.
- Five day FDP on “Developing Winning Research Proposals” from 8-08-2022 to 12-08-2022 conducted by VNR VJIET, Hyderabad.
- Five day FDP (SERB Sponsered International Workshop) on “Recent Trends in Semiconductor Devices/ VLSI Chip devices and sensor applications” from 23-01-2023 to 27-01-2023 conducted by KL University, Guntur.
- Five day FDP on “Design and Implementation of Advanced VLSI Architectures” from 13-03-2023 to 17-03-2023 conducted by LBRCE.

5. Academic Contribution and Research & Consultancy:

5.1. Invited Lectures: Nil

5.2. Articles/Chapters published in Books: **02**

S.No	Title of Book Chapter	Title of the Book	ISSN/ISBN Number	Publisher	Indexing
1	An efficient low latency router architecture for mesh based NoC	Advances in Communications, Signal Processing, and VLSI	978-981-33-4058-9	Springer	Scopus
2	Nanosheet FET for Future Technology Scaling	Integrated Devices and Circuits for Artificial Intelligence	--	Wiley	Scopus

5.3. Books published as single author or as editor: Nil

5.4. Projects Guided :

a) UG : **14**

b) PG : **04**

5.5. Research Interests :

- Network-on-Chip (NoC) architecture design
- Application Core Mapping in 2-D and 3-D environments
- Fault Tolerant Network-on-Chip
- Low Power VLSI Design
- Nanoscale Device Modelling (FinFET, Nanowire FET(NWFET), Nanosheet FET(NSFET))

5.6. Ph.Dstudents :

- a) Enrolled : **01(Part-Time, LPU University)**
 b) Submitted : Nil
 c) Awarded : Nil

5.7. Papers published in reviewed journals : **12**

S.No	Title of the Paper	Name of the Journal	ISSN / ISBN Number	Volume & Issue	Indexing
1	Using advanced distributed energy efficient clustering increasing the network lifetime in wireless sensor networks	Soft Computing Journal (Springer) (Impact Factor-3.732)	e-ISSN: 1433-7479	2023	Science Citation Index Expanded (SCIE)
2	Design and Performance Analysis of 32 x 32 Memory array SRAM for Low-Power Applications	Electronics (MDPI) (Impact Factor-2.690)	e-ISSN: 2079-9292	2023	Science Citation Index Expanded (SCIE)
3	An Efficient Real -Time Embedded Application Mapping For NoC Based Multiprocessor System on Chip	Wireless Personal Communications (Springer) (Impact Factor-2.012)	e-ISSN: 1572-834X	2023	Science Citation Index Expanded (SCIE)
4	Performance and Communication Energy constrained Embedded Benchmark for Fault Tolerant Core Mapping onto NoC architectures	International Journal of Ad Hoc and Ubiquitous Computing (Inderscience Publishers) (Impact Factor-0.773)	ISSN online 1743-8233	2022	Science Citation Index Expanded (SCIE)
5	Performance Assessment of Adaptive Core Mapping for NoC-based architectures	International Journal of Embedded Systems (Inderscience Publishers) (Impact Factor-1.8)	ISSN 1741-1076	2022	Emerging Sources Citation Index (ESCI) ,Scopus (Elsevier)
6	An Adaptive Core Mapping Algorithm on NoC for Future Heterogeneous System-on-Chip	Computers and Electrical Engineering (Elsevier) (Impact Factor-4.152)	ISSN: 0045-7906	Vol 95, 2021	Science Citation Index Expanded (SCIE)
7	Evaluation of low power consumption network on chip routing architecture	Microprocessors and Microsystems (Elsevier)	ISSN: 0141-9331	Vol82, 2021	Science Citation Index (SCI)

		(Impact Factor-3.503)			
8	Scalable benchmark synthesis for performance evaluation of NoC core mapping	Microprocessors and Microsystems (Elsevier) (Impact Factor-3.503)	ISSN: 0141-9331	Vol 79, 2020	Science Citation Index (SCI)
9	Implementation of High speed and Low power 6T SRAM cell using FinFET at 22nm technology	International Journal of Engineering And Computer Science	ISSN: 2319-7242	Vol. 5, No. 12, 2016	Web of Science (WoS)
10	Development of effective method for agriculture monitoring using WSN and IOT	International Journal of Research (IJR)	e-ISSN: 2348-6848	Vol2, Issue 8, 2015	UGC CARE LIST
11	Analysis for saturation throughput using various mechanisms for IEEE 802.11 WLAN's	International Journal For Research in Applied Science and Engineering Technology	ISSN: 2321-9653	Vol. 2, No. 5, 2015	Scopus
12	A Robust Algorithm For Digital Image Copyright Protection	International Journal of Electrical and Electronic Engineering & Telecommunications	ISSN 2319 – 2518	Vol. 3, No. 3, 2014	UGC CARE LIST

5.8. Papers presented at National / International Conferences:13

S.No	Title of the Paper	Names of the Conference/ Seminars	National/ International	Period
1	An Efficient AVR interfaced bluetooth controlled Robotic Car system	13 th International Conference on Cloud Computing, Data Science & Engineering (Confluence-2023), Noida, India	International (IEEE-Scopus Indexed)	2023
2	Mongoose OS Prototyped ESP8266 Based Weather Forecaster	2022 International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMAcc-2022), Hyderabad, India	International (IEEE-Scopus Indexed)	2022
3	Fault-Tolerant Core Mapping for NoC Based Architectures with Improved Performance and Energy Efficiency	29 th International Conference on Electronic Circuits and systems(ICECS-2022)	International (IEEE-Scopus Indexed)	2022
4	A Novel RRAM based FPGA architecture with Improved Performance and Optimization	IEEE 19 th India Council International Conference (INDICON-2022)	International (IEEE-Scopus Indexed)	2022

	Parameters			
5	An Efficient Low-Power VIP-based VC Router Architecture for Mesh-based NoC	IEEE 19 th India Council International Conference (INDICON-2022)	International (IEEE-Scopus Indexed)	2022
6	Design of High Speed 8-bit Vedic Multiplier using Brent Kung Adders	13th International Conference on Computing Communication and Networking Technologies (ICCCNT-2022)	International (IEEE-Scopus Indexed)	2022
7	Characterization for Sub-5nm Technology Nodes of Junctionless Gate-All-Around Nanowire FETs	13th International Conference on Computing Communication and Networking Technologies (ICCCNT-2022)	International (IEEE-Scopus Indexed)	2022
8	An Efficient two Dimensional Mapping of External Surroundings for Robotics and Drones	13th International Conference on Computing Communication and Networking Technologies (ICCCNT-2022)	International (IEEE-Scopus Indexed)	2022
9	An Efficient Door Access System Controlled by Temperature using LabVIEW	13th International Conference on Computing Communication and Networking Technologies (ICCCNT-2022)	International (IEEE-Scopus Indexed)	2022
10	An efficient Pulse Detector with Arduino and IR Sensor	13th International Conference on Computing Communication and Networking Technologies (ICCCNT-2022)	International (IEEE-Scopus Indexed)	2022
11	An Efficient FPGA Implementation of Cascade Integrator Comb Filter	International Conference on Intelligent Innovations in Engineering and Technology (ICIET-2022)	International (IEEE-Scopus Indexed)	2022
12	Exact Formulas for Fault Aware Core Mapping on NoC Reliability	2020 IEEE 17 th India Council International Conference (INDICON-2020), New Delhi, India.	International (IEEE-Scopus Indexed)	2020
13	Efficient Core Mapping on Customization of NoC Platforms	2019 IEEE International Symposium on Smart Electronic Systems (iSES-2019) (Formerly iNiS), NIT Rourkela, India.	International (IEEE-Scopus Indexed)	2019

5.9. Sponsored research Projects: Nil

S.No	Title	Agency	Period	Grant amount	Ongoing / Completed

5.10 Consultancy Projects: Nil

S.No	Title	Agency	Period	Sanctioned Amount	Ongoing / Completed

6. Awards / Honors received:

- UGC-NET (Assistant Professor) Qualified in June-2014, December-2014.
- GATE-2010, GATE- 2014, GATE-2017 Qualified.
- Member of **IEEE** (Member ID-96332046), Hyderabad Section.
- Life Member of **IETE** (M-502917).
- Reviewer of the following journals
 - Microprocessors and Microsystems
 - Wireless Personal Communications
 - Super Computing Journal
 - Silicon
 - International Journal of Ad Hoc and Ubiquitous Computing
 - International Journal of Embedded Systems
- Google Scholar Citations : 220(H-index: 10, i10-index:10)

7. Motto: There are no shortcuts to Success, it is the result of Preparation, Hard work and Learning from Failures.